

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

ORDER NO. 98-082

13-AA-00019

WASTE DISCHARGE REQUIREMENTS  
FOR  
REPUBLIC IMPERIAL ACQUISITION CORPORATION DBA MALS PROPERTIES  
DBA IMPERIAL COUNTY SANITATION, OWNER/OPERATOR  
CLOSURE AND POST - CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
CLASS III LANDFILL  
East of Imperial - Imperial County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. Republic Imperial Acquisition Corporation (hereinafter referred to as the discharger) 104 East Robinson Road, Imperial, California 92251, owner and operator of the Republic Imperial Landfill (hereinafter referred to as the Landfill), submitted a Final Closure/Post Closure Maintenance Plan on March 6, 1998 and a revised closure plan on May 13, 1998 for closure of the Landfill.
2. The land that the Landfill is located on is a 170-acre parcel and consists of the following:
  - a. An approximately 31-acre active eastern Landfill.
  - b. A five-acre active western Landfill, constructed in July 1995.
  - c. Buildings and facilities.
3. These closure waste discharge requirements (WDRs) are for the 31-acre active eastern Landfill.
4. Definition of terms used in this Board Order:
  - a. Waste Management Facility (WMF) - The entire parcel of property at which waste discharge operations are conducted.
  - b. Waste Management Unit (WMU) - An area of land, or a portion of a waste management facility, at which waste is discharged. The term includes containment features and ancillary features for precipitation and drainage control and monitoring.
  - c. Landfill - A waste management unit at which waste is discharged in or on land for disposal. It does not include surface impoundments, waste piles, land treatment or soil amendments.
5. The Landfill is located in the southeastern portion of Imperial County, California, approximately 3 miles east-northeast of the City of Imperial as shown on Attachment A. The Landfill is at 32° 21' North Latitude, and 115° 20' West Longitude. The Landfill occupies Tract 223, T15S, R14E, SBB&M and a 10.49-acre portion of Tract 197, T15S, R14E, SBB&M as shown on Attachment B.

6. Board Order 93-071, amending all Municipal Solid Waste Landfill Board Orders to comply with federal regulations was adopted by the California Regional Water Quality Control Board, Colorado River Basin Region (hereinafter referred to as the Regional Board). Waste Discharge Requirements in Board Orders No. 83-060 and 93-071 are being updated to incorporate applicable closure regulations of combined SWRCB/CIWMB Regulations, Division 2, Title 27 (hereinafter referred to as Title 27) and Closure and Post-Closure regulations of Section 258.6, Subpart F of the Resource Conservation and Recovery Act, Subtitle D (hereinafter referred to as RCRA Subtitle D).
7. The WMF is bounded on the north by McCall Drain 1B and by the Date Canal; on the east by Parcel 2, Tract 197; on the south by Robinson Road and on the west by Tract 222.
8. The Landfill is centrally located within the Imperial Valley physiographic province. The valley slopes gently to the northeast on a very flat plain. General land elevation is between 75 and 85 feet below mean sea level (MSL) in the vicinity of the facility. The Imperial Fault scarp, which crosses the facility site, adds about 10 to 15 feet of local relief at the northeast corner of the property. This scarp is dissected at generally right angles to the fault trace by erosional gullies and arroyos except where obliterated by man-made construction. At the Landfill, unconsolidated Quaternary clay, silt, and fine sand deposited by ancient Lake Cahuilla and local sediments from recent erosional reworking form the surficial deposits.
9. The dominant geological feature in the region is the Salton Trough, which forms part of the Colorado Desert Geomorphic Province. The Imperial Valley is essentially a flat featureless alluvial basin along its western and eastern boundaries. Below the alluvial cover of Imperial Valley lies an unexposed succession of Tertiary and Quaternary sedimentary rocks thought to be at least 20,000 feet thick. Surface sediments consist of Holocene clay and silt alluvium grading to sandy gravel near the mountains.
10. During Quaternary times, from at least 13,000 years ago to as recently as several hundred years ago, the central parts of Imperial Valley, including the site, lay beneath ancient Lake Cahuilla. Lake Cahuilla originated by periodic overflow and diversions of the Colorado River into the Salton Basin. Sediments from Lake Cahuilla consist primarily of silt and clay in the central portion of the basin.
11. Active fault zones occur in the Valley. The principal fault zones consist of the San Andreas system which parallels the northeast margin of the Salton Trough and obliquely transects its southwest flank; the Clark and Coyote Creek branches of the San Jacinto fault zone which transects the southwest flank of the Salton Trough, and the Elsinore fault zone along the southwest edge of the Trough. The Brawley fault zone, including the seismic zone that marks its northward extension, and the Imperial, Superstition Hills and the Superstition Mountain faults are situated on or near the axis of the Trough. With the exception of the Brawley fault zone, all the above-named faults display the surficial features characteristic of the San Andreas system throughout California; linearity, northwest-southeast trend, physiographic evidence of recent activity and right-lateral displacement. Attachment C shows the location of faults in the valley.
12. The dominant tectonic feature in the area is the Imperial Fault. The fault trends southeast through the Imperial Valley, cuts across the northeast corner of the Landfill property east of State Route 111 and passes east of the town of El Centro. Movement on the Imperial Fault is well documented from extensive field investigations conducted after the Imperial Valley earthquakes of 1940 and 1979. Although displacement along the fault is generally right lateral, some vertical components of displacement exist.

13. The discharger reports that studies conducted since 1992 have revealed the presence of other faults, roughly parallel to but smaller than the Imperial Fault, trending through areas of the central portion of the WMF. In 1979, two surface ruptures were mapped by the U.S.G.S. following the earthquake along the Imperial Fault in October, 1979. Initial shallow trench evaluation of the two surface ruptures in 1992 was conducted by Cascade Pacific Engineering, Inc., resulting in verification of subsurface deformation coincident with the northern mapped rupture. Subsequently, two additional shallow trenching investigations were conducted by EMCON. The objective of the investigation was to document any fault or fault related features regardless of size. The results of the investigations include evidence of a number of discontinuities, ancillary faults existing along a north/south zone in the central portion of the WMF. The faults in areas of the central zone appear to be ancillary to the Imperial Fault. In contrast to the strike-slip displacement of the Imperial Fault, relative movement of the ancillary faults appears to be normal, with the down thrown side being to the east.
14. Land use within 1,000 feet of the Landfill is shown on Attachment D, and as follows:
  - a. Fallow and cultivated agricultural fields
  - b. Five residences located within 900 feet of the Landfill property boundary.
15. The Landfill started operating in the 1960's as a burn site. The property was purchased in 1971 by Arthur Bagdasarian. On December 9, 1971, the California Regional Water Quality Control Board, Colorado River Region, (Regional Board) adopted WDRs in Board Order No. 71-065 for the landfill. The WDRs were updated in Board Order No. 75-006, adopted on February 13, 1975 and in Board Order No. 83-060 adopted on July 13, 1983. The property was purchased in 1990 by Republic Imperial Acquisition Corporation.
16. The Landfill is not lined and does not have a leachate collection and removal system.
17. The Landfill is scheduled to close in May of the year 2000.
18. The Landfill presently accepts on average 170 tons per day of municipal solid waste.
19. The Landfill presently accepts Class III non-hazardous waste. The waste types accepted at the Landfill are as follows:
  - a. Residential
  - b. Commercial
  - c. Agricultural
  - d. Industrial
  - e. Construction/demolition
  - f. Sewage sludge
  - g. Inert solid fill
  - h. Ash
  - i. Tires
20. The Landfill has an estimated total capacity of 2.2 million yd<sup>3</sup> including refuse and daily cover. Total estimated in place quantity of refuse and cover is 2.0 million yd<sup>3</sup> and remaining estimated capacity is 230,700 yd<sup>3</sup>, including refuse and daily cover.
21. The discharger has a load-checking program for identifying and removing hazardous and prohibited waste coming to the Landfill. Specific components of the program include the following:

- a. Generator interview.
  - b. Customer notification by signs and verbal inquiries.
  - c. Surveillance through visual inspection of waste loads at the working face and questioning the haulers.
  - d. Personnel training.
22. Any hazardous materials found at the Landfill are removed within 90 days and disposed of properly.
23. The area fill method is used for waste disposal operations at the Landfill. Mobile equipment operators push the waste up the working face, spreading and compacting the waste in approximately two-foot layers. The working face of the Landfill is approximately five to eight feet high. Refuse placed during the working day is covered with soil, compacted to form a minimum six inch cover.
24. The discharger proposes the following litter control program:
- a. Maintain a litter fence around the active area of the Landfill;
  - b. Inspect the site perimeter roads on a daily basis; and
  - c. Collect and dispose of accumulated windblown debris from the WMF and adjacent areas on a daily basis.
25. Spent geothermal brine filters that met the criteria for California hazardous waste under California Code of Regulations, (CCR) Title 22 due to heavy metal content (specifically, antimony, arsenic, mercury, and selenium) were disposed of in the Landfill from approximately early 1987 until early 1992. On October 14, 1992, the discharger applied to the Department of Toxic Substances Control (DTSC) to classify the spent filters as a special waste. The spent filters meet all the technical and analytical requirements for classification as a special waste in accordance with California Code of Regulations Title 22. On December 31, 1996, DTSC granted the discharger a variance to allow the spent filters already present at the Landfill to remain at the landfill as a California Special Waste.
26. The variance DTSC initially issued terminated on June 30, 1998. On February 2, 1998 the discharger requested a six-month extension to the termination date of June 30, 1998 to allow for preparation of closure documents. DTSC granted the extension to the discharger on March 20, 1998 with a revised termination date of December 31, 1998.
27. In the final Closure/Post Closure Plan submitted to the Regional Board on May 13, 1998, the discharger proposed a monolithic final cover design. This design differed from the original proposed prescriptive cover design upon which the DTSC had granted the variance.
28. On August 25, 1998, DTSC approved the revised monolithic final cover design proposed by the discharger.
29. The final Closure/Post Closure Maintenance Plan, including the monolithic cover design, was approved by the Regional Board's Executive Officer on September 2, 1998.
30. Naturally existing surface water in the vicinity of the site is rare. Manmade surface water structures consist of canals that conduct water from the All-American canal and agricultural drains

which lead to the Alamo and New Rivers, and ultimately discharge to the Salton Sea. These manmade surface water structures are as follows, and are shown on Attachment E.

- a. Canals: On the south side, lying between the WMF and McCall Drain 1, the covered Dogwood Canal feeds irrigation water to the areas east of the WMF. The Date Canal lies just north of McCall Drain 1B.
  - b. Drains: The two local agricultural drains in the adjoining are, the McCall Drains 1B and 1, are located on the north side and south side of the WMF, respectively.
31. Surface drainage from the site is controlled and directed into the drainage system via berms, ditches and culverts. The site was re-contoured in early 1992 to minimize ponding of water in interior areas and to prevent uncontrolled runoff from eroding exterior slopes of the Landfill. Surface drainage from exterior slopes along the south, east and north side of the 31-acre Landfill is now prevented from leaving the site by exterior berms. These berms direct runoff into surface channels and into the McCall Drain 1B via a 12-inch outlet pipe located near the northeast corner of the site. The drains carry very low quality water relative to the irrigation canals, typically showing high levels of conductivity due to dissolved salts derived from natural and agricultural sources.
  32. The 100-year, 24-hour precipitation event for the site is approximately 3.39 inches.
  33. The site is not within the 100-year flood plain.
  34. Federal regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124.) The regulations require specific categories of facilities which discharge storm water associated with industrial activity to obtain NPDES permits and to implement Best Conventional Pollutant Technology (BCT) to reduce or eliminate industrial storm water pollution.
  35. The State Water Resources Control Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent by industries to be covered under the Permit.
  36. The discharger reports that, in general, ground water in Imperial Valley is of poor quality. The total dissolved solids range from approximately 15,000 ppm in shallow ground water to 2,000 ppm at an average depth of 1,000 feet below ground surface.
  37. In 1987, the discharger installed five ground water monitoring wells, MW-1 through MW-5 for ground water sampling. The discharger reports the design of monitoring wells MW-1 through MW-4 was inadequate, allowing the well bottoms to plug with silt. MW-5 was accidentally covered during landfill activities, but it was located and properly abandoned in April of 1996. Five new wells, MW-6 through MW-10 were installed in 1991. Five additional wells, MW-11 through MW-13 were installed in 1993 and MW-14 and MW-15 were installed in 1996. Monitoring wells MW-6 through MW-15 are used for quarterly monitoring. Attachment F shows the location of all the monitoring wells at the Landfill.
  38. The discharger has performed several hydrological and geological studies, including drilling geo-technical wells to log subsurface conditions and establish water levels beneath the WMF. The discharger reports that:

- a. Average depth-to-ground water ranges from 8 to 14 feet below ground surface.
  - b. The general ground water flow at the WMF is from the southwest to the northeast.
  - c. In-site permeability determined from slug tests averaged approximately  $3.3 \times 10^{-4}$  cm/sec.
  - d. The shallow aquifer appears confined. Additionally, the deeper aquifer is under pressure and has an upward vertical gradient.
39. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993 and designates the beneficial uses of ground and surface waters in this Region.
40. The Landfill is located in the Imperial Hydrologic Unit. The beneficial uses of ground water in the Imperial Hydrologic Unit are:
- a. Municipal (MUN)<sup>1</sup>
  - b. Industrial (IND)

41. The discharger in the revised Final Closure/Post-closure Maintenance Plan proposed the following:

#### I. CLOSURE

- a. Alternative final cover – in ascending order:
  - i. Foundation Layer – one foot of existing interim Landfill cover and one foot of soil with permeability of at least  $1 \times 10^{-4}$  cm/sec
  - ii Low Permeability and Protection Layer – Two feet of soil with permeability of at least  $1 \times 10^{-4}$  cm/sec.
- b. Final cover on top of the Landfill is designed at a minimum three percent grade.
- c. Side slopes of the completed cover are designed with a maximum of three horizontal to one vertical.
- d. Erosion of the final cover will be mitigated by placement of erosion control blankets. The control blankets consist of coconut fibers mechanically attached or woven into two continuous slow degrading synthetic netting structures.
- e. The Landfill settlement will be monitored by installing:
  - 1) Three monuments on top of the Landfill, and
  - 2) Two reference monuments off the Landfill

The monuments will be surveyed upon completion of closure activities and every five years thereafter throughout the post-closure maintenance period.
- f. Any precipitation falling on the Landfill will be directed toward diversion berms along the top deck perimeter due to the three percent gradient. The collected run-

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<sup>1</sup> The actual municipal usage is limited to only a small portion of the ground water unit.

off will be conveyed along the diversion berms at a 1 to 2 percent slope to down drain inlets and then conveyed through down drains which terminate at energy dissipater elements. Bench flows are directed toward inlets located at the down drain bench crossing. These flows are also directed via these down drains to the toe of the Landfill. The flow will then be directed east or west of the Landfill to the detention/sedimentation basins. The ponds are designed to contain flows from a 100-year, 24-hour storm event. The perimeter drainage system is designed to discharge into the existing McCall Drain 1B.

- g. The ten existing ground water wells (MW-6 through MW-15) will be monitored during the closure and post closure maintenance period.
- h. Landfill gas monitoring will be conducted with the use of a combustible gas meter and samples will be taken at approximately 500 feet intervals.

## **II. POST- CLOSURE MAINTENANCE**

- a. The discharger will inspect the Landfill quarterly for evidence of erosion, ponding, cracking, and slope failure. The quarterly inspection also includes recording any evidence of passive gas system failure, such as any unusual ground surface seeps, odors or disturbance of the cover that appear along the pipe alignment. Ambient air monitoring inspection will be done quarterly as well. Appropriate measures will be taken to repair and correct any damage observed at the Landfill.
- b. Settlement inspections will be done every five years throughout the post-closure maintenance period. Any settlement of the cover system will be appropriately mitigated in a manner acceptable to the Regional Board's Executive Officer.

- 42. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.
- 43. The Board in a public meeting heard and considered all comments pertaining to this discharge.
- 44. The Regional Board finds that the 31-acre landfill project is in compliance with the provisions of Title 27, as well as 40 CFR, Parts 257 and 258, the Federal RCRA Subtitle "D" (Subtitle D) Regulations promulgated by the U.S. Environmental Protection Agency (EPA) on October 9, 1991, effective October 9, 1993.

## **CEQA**

- 45. The County of Imperial, on September 3, 1996, certified a final Environmental Impact Report (EIR) for the Landfill, dated July, 1996 as adequate and in compliance with the California Environmental Quality Act (CEQA, Public Resources Code Section 21000 et. seq.). On September 23, 1998, the Imperial County Planning Commission approved by resolution, the Negative Declaration findings of the Environmental Evaluation Committee assessing the impacts of an alternative cover design and filed a Notice of Determination certifying the Negative Declaration for this design change as adequate, pursuant to the provisions of CEQA (Public Resources Code Section 21000 et seq.) The project as approved by the County of Imperial, will have the following potentially significant impacts on water quality.

- a. **Potential Impact:** The project has the potential for slope failure and structural damage in the event of a strong seismic shaking (maximum probable earthquake (MPE)).
- Mitigation:** Discharge Specifications 3, 4, 5, and 6 of this Board Order will mitigate or avoid the adverse environmental impacts of the project on water quality.
- b. **Potential Impact:** Storm water runoff from the exterior Landfill slope has the potential to cause soil erosion and impact surface water.
- Mitigation:** Discharge Specifications 3, 4, 5, 8, 10, 11, 12, and 17 of this Board Order will mitigate or avoid the adverse environmental impacts of the project on water quality.
- c. **Potential Impact:** Windblown litter from the Landfill has the potential to degrade the water quality in the canals.
- Mitigation:** Discharge Specification 13 of this Board Order will mitigate or avoid the adverse environmental impacts of the project on water quality.
- d. **Potential Impact:** The project has the potential of degrading ground water due to migration of leachate.
- Mitigation:** Specifications 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 17, 19, 20, 21, and 25 of this Board Order will mitigate or avoid the adverse environmental impacts of the project on water quality.
- e. **Potential Impact:** Leachate from spent geothermal filters has the potential of degrading water.
- Mitigation:** Specifications 2, 3, 4, 5, 7, 8, 19, 11, 12, 17, 19, 20, 21, and 25 of this Board Order will mitigate or avoid the adverse environmental impacts of the project on water quality.
46. The California Integrated Waste Management Board has received and has approved Financial Assurance Mechanisms for closure and post-closure maintenance costs, in the form of performance bonds from the discharger. The performance bonds for closure and post-closure in the amount of \$2,700,000 and \$3,700,000, respectively, meet the requirements of Title 27, Section 22244.

IT IS HEREBY ORDERED, that Board Order No. 83-060 is rescinded, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the discharger shall comply with the following:

**A. Specifications**

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Section 13050 of Division 7 of the California Water Code.
2. The discharger shall install the following alternative final cover, in ascending order, for the Landfill:
  - a. Foundation Layer – one foot of existing interim Landfill cover and one foot of soil with permeabilities not greater than  $1 \times 10^{-4}$  cm/sec
  - b. Low Permeability and Protection Layer – Two feet of soil with permeability not greater than  $1 \times 10^{-4}$  cm/sec.
3. The top of the Landfill shall be constructed to have a slope of three (3) percent and the completed side slopes shall have, at maximum, a 3:1 (three to one) horizontal to vertical slope.
4. The discharger shall place erosion control blankets to mitigate side slope erosion of the final cover at the Landfill.
5. Any precipitation falling on the Landfill shall be directed to the detention/sedimentation basins as stated in Finding No. 42 (f) of this Board Order.
6. A minimum depth of freeboard of two (2) feet shall be maintained for any storm event at all times in the detention/sedimentation ponds that receive runoff from the landfill.
7. Any precipitation falling on perimeter of the Landfill shall be directed away from the Landfill.
8. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the Landfill drainage facility inoperable.
9. The Landfill shall be protected from any washout or erosion of wastes or covering material, and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years.
10. Drainage features within the Landfill footprint shall be designed to accommodate the 100-year, 24-hour storm event.
11. The discharger shall inspect the Landfill quarterly for evidence of erosion, ponding, cracking, and slope failure. The quarterly inspection shall also include recording any evidence of passive gas system failure, such as any unusual ground surface seeps, odors or disturbance of the cover that appear along the pipe alignment.
12. The discharger shall take appropriate measures to repair and correct any damage observed at the Landfill in a timely manner.

13. The discharger shall implement the following litter control program:
  - a. Maintain a litter fence around the active area of the Landfill;
  - b. Inspect WMF perimeter roads on a daily basis; and
  - c. Collect and dispose of accumulated windblown debris from the WMF and adjacent areas on a daily basis.
14. Waste materials shall be confined to the Landfill as defined in Finding No. 3(a) and described in the attached map site maps.
15. The discharge shall not cause degradation of any water supply.
16. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources, shall not contact or percolate through the wastes discharged at this site.
17. The exterior surfaces of the disposal area, including the intermediate and final landfill covers, shall be graded and maintained to promote lateral runoff of precipitation and to prevent ponding.
18. The discharger shall use the constituents listed in Monitoring and Reporting Program No. 98-082 and revisions thereto, as "monitoring parameters". These monitoring parameters are subject to the most appropriate statistical or non-statistical tests under Monitoring and Reporting No. 98-082, Part III, and any revised Monitoring and Reporting Program approved by the Regional Board's Executive Officer.
19. The discharger shall implement the attached Monitoring and Reporting Program No. 98-082 and revisions thereto in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Landfill, or any unreasonable impairment of beneficial uses associated with (caused by) discharges of waste to the Landfill.
20. The discharger shall not cause the concentration of any Constituent of Concern or Monitoring Parameters to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to Parts II B.4 of the attached Monitoring and Reporting Program No. 98-082, and revisions thereto.
21. The discharger shall follow the Water Quality Protection Standards (WQPS) for detection monitoring established by the Regional Board in this Board Order pursuant to Title 27, Section 20390. The following are five parts of WQPS as established by the Regional Board (the terms of art used in this Board Order regarding monitoring are defined in Part I of the attached Monitoring and Reporting Program No. 98-082 and revisions thereto, which is hereby incorporated by reference):
  - a. The discharger shall test for the Monitoring Parameters and the Constituent of Concern (COC) listed below and in the Monitoring and Reporting Program No. 98-082, and revisions thereto, for:

**Monitoring Parameters:**

1. Inorganic
  - Alkalinity (as CaCO<sub>3</sub>)
  - Ammonia – Nitrogen
  - Antimony
  - Arsenic
  - Barium
  - Beryllium
  - Bicarbonate (HCO<sub>3</sub>)
  - Cadmium
  - Calcium
  - Carbonate (CO<sub>3</sub>)
  - Carbonate (CaCO<sub>3</sub>)
  - Chloride
  - Chromium
  - Cobalt
  - COD
  - Copper
  - Cyanide
  - Electrical Conductivity
  - Iron
  - Lead
  - Magnesium
  - Manganese
  - Mercury
  - Nickel
  - Nitrate – Nitrogen
  - Nitrite – Nitrogen
  - Potassium
  - pH
  - Selenium
  - Silver
  - Sodium
  - Sulfide
  - Sulfate
  - Thallium
  - TDS
  - Vanadium
  - Zinc
2. Specific conductance
3. Temperature
4. Volatile organics
5. Semi-volatile organics
6. Ground water elevation

Constituent of Concern

1. Appendix I and II of Title 27
- b. Concentration Limit – The concentration limits for each monitoring parameter and constituents of concern for each monitoring point (as stated in detection Monitoring Program Part II), shall be its background value as obtained during that reporting period.
- c. Monitoring points (Points of Compliance) and background monitoring points for detection monitoring shall be those listed below and in Part II, B of the attached Monitoring and Reporting Program No. 98-082, and any revised Monitoring and Reporting Program approved by the Regional Board's Executive Officer:
  1. Background monitoring points: MW-6, MW-7, MW-11, MW-12, and MW-13
  2. Point of compliance monitoring: MW-8, MW-9, MW-10, MW-14, and MW-15
- d. Background and compliance monitoring wells are shown on Attachment F and extend down through the zone of saturation.
- e. Compliance period – The estimated duration of the compliance period for this Landfill is six years. Each time the Standard is not met (i.e., releases discovered), the Landfill begins a compliance period on the date the Regional Board directs the dischargers to begin an Evaluation Monitoring Program. If the dischargers' Corrective Action Program (CAP) has not achieved compliance with the standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the Landfill has been in continuous compliance for at least three consecutive years.
22. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, or pollution to occur, as indicated by the most appropriate statistical (or non-statistical) data analysis method and retest method listed in Part III of the attached Monitoring and Reporting Program No. 98-082 and revisions thereto.
23. The discharger shall install three settlement monuments on the Landfill and two survey monuments on the ground for monitoring refuse settlement at the Landfill. Also the entire permitted site shall be aerially photographed at the end of the closure activities and every five years throughout the post closure period.
24. The discharger shall remove and relocate any wastes that are discharged at this site in violation of these requirements.
25. Water used for site maintenance shall be limited to amounts necessary for dust control.

## **B. Prohibitions**

1. The discharge or deposit of hazardous waste, as defined in Title 27, is prohibited at this WMF.
2. The discharge or deposit of designated waste, as defined in Title 27, is prohibited at this WMF unless approved by the Regional Board's Executive Officer.
3. The co-disposal of incompatible wastes is prohibited.
4. The discharge of waste to land not owned or controlled by the discharger is prohibited.
5. The discharge shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.
6. The direct discharge of any waste to any surface waters or surface drainage courses is prohibited.
7. The discharge of liquid or semi-solid waste (i.e. waste containing less than 50 percent solids) to the Landfill is prohibited unless approved by the Regional Board's Executive Officer.

## **C. Provisions**

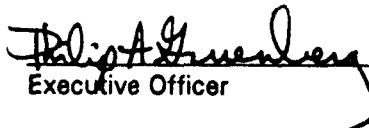
1. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
2. The discharger shall ensure that all site-operating personnel are familiar with the content of this Board Order, and shall maintain a copy of this Board Order at the site.
3. This Board Order does not authorize violation of any federal, state, or local laws or regulations.
4. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
  - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
  - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.

5. The discharger shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil or other geologic materials outside the Landfill if such waste constituents could migrate to waters of the State in either the liquid or the gaseous phase, and cause conditions of contamination or pollution.
6. This Board Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
7. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.
8. All regulated disposal systems shall be readily accessible for sampling and inspection.
9. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.
10. The discharger is the responsible party for the waste discharge requirements and the monitoring and reporting program for the facility. The discharger shall comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board Orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board.
11. The discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.
12. All containment structures and erosion and drainage control systems shall be designed and constructed under direct supervision of a California Registered Civil Engineer or Certified Engineering Geologist, and shall be certified by the individual as meeting the prescriptive standards and performance goals of Title 27.
13. After a significant earthquake event, the discharger shall:
  - a. Immediately notify the Regional Board by phone; and
  - b. Within 7 days submit to the Regional Board a detailed post-earthquake report describing any physical damages to the containment features, ground water monitoring and/or leachate control facilities and a corrective action plan to be implemented at the landfill.
14. The discharger shall immediately notify the Regional Board of any flooding, slope failure or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
15. The discharger shall maintain legible records on the volume and type of each waste discharged at the site. These records shall be available for review by representatives of

the Regional Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.

16. The discharger shall maintain visible monuments identifying the boundary limits of the entire waste management facility.
17. The discharger shall submit to this Regional Board and to the California Integrated Waste Management Board, evidence of Financial Assurance for Closure and Post Closure, pursuant to (Section 22207 and 22212 of Title 27). The post-closure period shall be at least 30 years. However, the post-closure maintenance period shall extend as long as the waste poses a threat to water quality.
18. Within 180 days of the adoption of this Board Order, the discharger shall submit to the Regional Board in accordance with (Section 20380(b) of Title 27), assurance of financial responsibility acceptable to the Regional Board's Executive Officer for initiating and completing corrective action for all known or reasonable foreseeable releases from the Landfill.
19. This Board Order is subject to Regional Board review and updating, as necessary to comply with changing State or Federal laws, regulations, policies, or changes in the discharger characteristics.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on November 12, 1998.

  
Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

**MONITORING AND REPORTING PROGRAM NO. 98-082  
FOR  
REPUBLIC IMPERIAL ACQUISITION CORPORATION DBA MALS PROPERTIES  
DBA IMPERIAL COUNTY SANITATION, OWNER/OPERATOR  
CLOSURE AND POST-CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
CLASS III LANDFILL  
East of Imperial - Imperial County**

**CONSIST OF**

**PART I, PART II AND PART III**

## **PART I**

### **A. GENERAL**

Responsibilities of waste dischargers are specified in Section 13225(a), 13267(b), and 13387(b) of the California Water Code, and the State Water Resources Control Board's Resolution No. 93-062. This self-monitoring program is issued pursuant to Regional Board Order No. 98-082. The principal purposes of a self-monitoring program by a waste discharger are:

1. To document compliance with waste discharge requirements and prohibitions established by the Regional Board.
2. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
3. To prepare water quality analyses;

### **B. DEFINITION OF TERMS**

1. The "Monitored Media" are those water and/or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the Landfill could be detected, and in any perched zones underlying the Landfill, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the Landfill, and (4) soil-pore gas beneath and/or adjacent to the Landfill.
2. The "Constituents of Concern (COC)" are those constituents which are likely to be in the waste in the Landfill or which are likely to be derived from waste constituents, in the event of a release.
3. The "Monitoring Parameters" consists of a short list of constituents and parameters used for the majority of monitoring activity.
4. The "Volatile Organics Composite Monitoring Parameter for Water (VOC<sub>water</sub>) is the Composite Monitoring Parameter addressing all volatile organic constituents detectable in a sample of water (See Part III.A.2. of this Program for additional discussion of the Monitoring Parameters).
5. "Standard Observations" refers to:
  - a. For Receiving Waters:
    1. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
    2. Discoloration and turbidity: description of color, source, and size of affected area;

3. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
  4. Evidence of beneficial use: presence of water-associated wildlife;
  5. Flow Rate; and
  6. Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
- b. Along the perimeter of the Landfill:
1. Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and flow rate (show affected area on map);
  2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
  3. Evidence of erosion and/or of exposed refuse.
- c. For the Landfill:
1. Evidence of ponded water at any point on the waste management facility (show affected area on map);
  2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
  3. Evidence of erosion and/or of daylighted refuse; and
  4. "Standard Analysis and Measurements", which refers to:
    - a. Turbidity (only for water samples) in NTU;
    - b. Water elevation to the nearest 1/100th foot above mean sea level (only for ground water monitoring); and
    - c. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.
6. "Matrix Effect" refers to any increase in the Method Detection Limit or Practical Limit for a given constituent as a result of the presence of other constituents - either of natural origin or introduced through a release - that are present in the sample of water or soil-pore gas being analyzed.

7. "Facility-Specific Method Detection Limit (MDL)", for a given analytical laboratory using a given analytical method to detect a given constituent (in spite of any Matrix Effect) means the lowest concentration at which the laboratory can regularly differentiate - with 99% reliability - between a sample which contains the constituent and one which does not.
8. "Facility-Specific Practical Quantitation Limit (PQL)", for a given analytical laboratory using a given analytical method to determine the concentration of a given constituent (in spite of any Matrix Effect) means the lowest constituent concentration the laboratory can regularly quantify within specified limits of precision that are acceptable to the Regional Board's Executive Officer.
9. "Reporting period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Therefore, the reporting period for monitoring parameters is quarterly, and the reporting period for Constituents of Concern is every five years. An annual report, which is a summary of all the monitoring during the previous years shall also be submitted to the Regional Board. The submittal dates for each reporting period shall be as follows:
  - a. Quarterly Monitoring Reports
    1. First quarter (January, February, and March) - report due by June 15
    2. Second quarter (April, May, and June) - report due by September 15
    3. Third quarter (July, August and September) - report due by December 15
    4. Fourth quarter (October, November and December) report due by March 15
  - b. Annual Summary Report  
January 1 through December 31 - report due on March 15
  - c. Five year Report  
Covering the fifth year and every five years during the post-closure period - report due by March 15 of the sixth year.

#### C. SAMPLING AND ANALYTICAL METHODS

Sampling collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and in accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board's Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

- a. The methods and analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "facility-specific method detection limit (MDL)", defined in Part I.B.7., shall be selected from among those methods which would provide valid results in light of any "Matrix Effects" (defined in Part I.B.6.) involved.
- b. "Trace" results, results falling between the MDL and the facility-specific practical Quantitation limit (PQL), shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituents concentration.
- c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and Quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or Quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and Quantitation limit actually achieved.
- d. All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.
- e. Upon receiving written approval from the Regional Board's Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
- f. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
- g. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
- h. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

**D. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identify and volumes of reagents used;
5. Calculations of results; and
6. Results of analyses, and the MDL and PQL for each analysis.

**E. REPORTS TO BE FILED WITH THE BOARD**

1. A written "Detection Monitoring Report" shall be submitted quarterly (Part II.B.2.), in addition to an "Annual Summary Report" (Part I.E.3.). Every five years, the discharger shall submit a report concerning the direct analysis of all Constituents of Concern as indicated in Part II.B.3. ("COC Report"). All reports shall be submitted no later than 75 days following the end of their respective Reporting Period. The reports shall be comprised of at least the following:

**a. Letter of Transmittal**

A letter transmitting the essential points in each report shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

- b. Each Detection Monitoring Report and each COC Report shall include a compliance evaluation summary. The summary shall contain at least:
1. For each monitored ground water body, a description and graphical presentation of the velocity and direction of the ground water flow under/around the Landfill, based upon water level elevations taken during the collection of the water quality data submitted in the report;
  2. Pre-Sampling Purge for Samples Obtained From Wells: For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water);
  3. Sampling: For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump - or other device - used and its placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations);
  4. Post-Sampling Purge (Title 27, Section 20415(e)(2)(B)): For each monitoring well addressed by the report, a description of how the well was purged to remove all portions of the water that was in the well bore while the sample was being taken;
- c. A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points;
- d. For each Detection Monitoring Report and each COC Report, include laboratory statements of results of all analyses demonstrating compliance with Part I.C;
- e. An evaluation of the effectiveness of the run-off/run-on control facilities;
- f. Summary and certification of completion of all Standard Observations (Part I. B.5) for the Landfill, for the perimeter of the Landfill, and for the Receiving Waters; and

## 2. CONTINGENCY REPORTING

- a. The discharger shall report by telephone concerning any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Board within seven days, containing at least the following information:
1. A map showing the location(s) of seepage;

2. An estimate of the flow rate;
  3. A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
  4. Corrective measures underway or proposed.
- b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent or Concern of Monitoring Parameter, that a release is tentatively identified, the discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituents(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination (Title 27 Section 20420(j)(1)), and shall carry out a discrete retest in accordance with Parts II.B.1., and III.A.3. If the retest confirms the existence of a release, the discharger shall carry out the requirements of Part I.E.2.d. In any case, the discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.
- c. If either the discharger or the Regional Board determines that there is significant physical evidence of a release (Title 27 Section 20385(3)), the discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination) and shall carry out the requirements of Part I.E.2.d. for all potentially-affected monitored media.
- d. If the discharger concludes that a release has been discovered:
- i. If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, pursuant to Part II.B.3., then the discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point (Title 27, Section 20420(k)(1));
  - ii. The discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20420(k)(5) and Section 20425; and
  - iii. The discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20420(k)(6).
- e. Any time the discharger concludes - or the Regional Board Executive Officer directs the discharger to conclude - that a liquid - or gaseous-phase release from the Landfill has proceeded beyond the facility boundary, the discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

- i. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the discharger's current knowledge of the nature and extent of the release; and
- ii. Subsequent to initial notification, the discharger shall provide updates to all Affected Persons - including any newly Affected Persons - within 14 days of concluding there has been any material change in the nature or extent of the release.

### 3. ANNUAL SUMMARY REPORT

The discharger shall submit an annual report to the Regional Board covering the previous monitoring year. The Reporting Period ends January 15. This report shall contain:

- a. A Graphical Presentation of Analytical Data (Title 27, Section 20415(e)(14)). For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point and Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Regional Board's Executive Officer may direct the discharger to carry out a preliminary investigation (Title 27, Section 20080 (d)(2)), the results of which will determine whether or not a release is indicated;
- b. All monitoring analytical data obtained during the previous two six-month Reporting Periods, shall be presented in tabular form as well as on 3½" diskettes, either in MS-DOS/ASCII format or in another file format acceptable to the Regional Board's Executive Officer. Data sets too large to fit on a single 360 K.B. diskette may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP). The Regional Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis (Title 27 Section 20420(h)), in that this facilitates periodic review by the Regional Board's statistical consultant;
- c. A comprehensive discussion of the compliance record, and the result of any correction actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements;
- d. A written summary of the ground water and soil-pore gas analyses, indicating any changes made since the previous annual report; and
- e. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27 Section 20340 (b, c, & d).

## **PART II: MONITORING AND OBSERVATION SCHEDULE**

### **A. WASTE MONITORING UNTIL CLOSURE DATE OF MAY 2000**

1. Report quarterly, as part of the Monitoring Report Part 1.B 9a. (June 15, September 15, December 15, and March 15).
  - a. Record the total volume and weight of refuse in cubic yards and tons disposed of at the site during each month, showing locations and dimensions on a sketch or map.
  - b. Record a description of the waste stream, including the percentage of the waste type (i.e., residential, commercial, industrial, or construction debris).
  - c. Record the location and aerial extent of disposal of each waste type.
  - d. A photograph of the landfill
2. Report annually as part of the annual monitoring report (March 15) of the following:
  - a. An aerial map of the facility,
  - b. Survey monuments

### **B. WATER AND SOIL-PORE GAS SAMPLING/ANALYSIS FOR DETECTION MONITORING**

1. Thirty-Day Sample Procurement Limitation. For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Title 27, Section 20415(e)(12)(B)). Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (temperature, electrical conductivity, turbidity) for that Monitoring Point or Background Monitoring Point (Title 27, Section 20415(e)(13)); ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the Spring and Fall ground water flow rate/direction analyses required under Part II.B.6. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this program.
2. "Indirect Monitoring" for Monitoring parameters done quarterly. All monitoring points assigned to Detection Monitoring (Part II B.4 below) and all background Monitoring points shall be sampled quarterly during March, June, September and December. Monitoring for Monitoring parameters shall be carried out in accordance with Part II.B.1 and Part III of this program.

3. "Direct Monitoring" of all Constituents of Concern Every Five Years. In the absence of a release being indicated (1) pursuant to Parts II.B.2. and III.A.3. for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c., or (3) by a study required by the Regional Board's Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Part I.E.3.a.), then the discharger shall sample all Monitoring Points and Background Monitoring Points of water-bearing media, not including soil-pore gas, for all Constituents of Concern every fifth year, beginning with the year of adoption of this Board Order, with successive direct monitoring efforts being carried out alternately in the Spring of one year (Report Period ends March 31) and the Fall of the fifth year thereafter (Reporting Period ends September 30). Direct monitoring for Constituents of Concern shall be carried out in accordance with Parts II.B.1. and III of this program, and shall encompass only those Constituents of Concern that do not also serve as a Monitoring Parameter.
4. Monitoring Points and Background Monitoring Points for Each Monitored Medium: The discharger shall sample the following Monitoring Points and Background Monitoring Points in accordance with the sampling schedules given under Parts II.B.2. and II.B.3. (immediately foregoing), taking enough samples to qualify for the most appropriate test under Part III.
  - a. For ground water in the uppermost aquifer:
    1. Monitoring points (points of compliance) shall be MW-8, MW-9, MW-10, MW-14, and MW-15.
    2. Background monitoring points shall be MW-6, MW-7, MW-11, MW-12, and MW-13.
5. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point in each monitored medium (Title 27, Section 25415 (e)(6)):
  - a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the discharger shall collect at least one sample quarterly for at least one year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
  - b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the discharger shall sample it at least quarterly for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.
6. Quarterly Determination of Ground Water Flow Rate/Direction (Title 27, Section 25415 (e)(15)): The discharger shall measure the water level in each well and determine ground water flow rate and direction in each ground water body described in Part II.A.4. at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. This information shall be included in the quarterly monitoring reports required under Part II.A.2.

**PART III STATISTICAL AND NON-STATISTICAL ANALYSES OF SAMPLE DATA  
DURING A DETECTION MONITORING PROGRAM**

**A. METHODS**

The discharger shall use the following methods of analysis, or propose alternate data analysis methods for the Executive Officer's approval and in compliance with Title 27, to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the Landfill. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.

1. **Statistical Methods.** The discharger shall use one of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the Statistical Methods Discussion which is attached to this Program and is hereby incorporated by reference. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (testing only for statistically significant increase relative to background):
  - a. **One-Way Parametric Analysis of Variance ANOVA followed by multiple comparisons** (Section 25415(e)(8)(A) of Title 27 Section 2550.7(e)(8)(A) of Chapter 15). This method requires at least four independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data from the parameter or constituent, obtained during a given sampling period, has not more than 15% of the data below PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the discharger shall conclude that a release is tentatively indicated from that parameter or constituent;
  - b. **One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons.** This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point, therefore, the discharger shall anticipate the need for taking more than four samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point,

the discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or

- c. Method of Proportions. This method shall be used if the "combined data set", the data from a given Monitoring Point in combination with the data from the Background Monitoring Points, has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method (1) requires at least nine downgradient data points per Monitoring Point per Reporting Period, (2) requires at least thirty data points in the combined data set, and (3) requires that  $N * P > 5$  (where N is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or
2. Non-Statistical Method. The discharger shall use the following non-statistical method for the VOC<sub>water</sub> and VOC<sub>soil</sub> Composite Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests under Part III.A.1.; each of these groupings of constituents utilizes a separate variant of the test, as listed below. Regardless of the variant used, the method involves a two-step process: (1) from all constituents to which the variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample, yet do so in less than ten percent of the applicable background samples; and (2) (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample which contains the largest number of constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one sample from each Background Monitoring Point). The method shall be implemented as follows:
- a. For the Volatile Organics Composite Monitoring Parameter for Water Samples (VOC<sub>water</sub>): For any given Monitoring Point, the VOC<sub>water</sub> Monitoring Parameter is a composite parameter addressing all VOCs detectable using the appropriate USEPA method, including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than ten percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The discharger shall conclude that a release is tentatively indicated for the VOC<sub>water</sub> Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL;
- b. For the Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas Samples (VOC<sub>soil</sub>): The VOC<sub>soil</sub> Monitoring Parameter is a composite parameter for soil-pore gas addressing at least all 47 VOCs listed in Appendix I to 40 CFR 258, based upon either GC or GC/MS analysis of at least ten liter samples of soil-pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC<sub>soil</sub> Monitoring Parameter. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (as unidentified peak is compared to its presumed MDL), and also (2) exceeds its MDL in less than ten percent of the

samples taken during that Reporting Period from the (soil-pore-gas) Background Monitoring Points. The discharger shall conclude that a release is tentatively indicated for the VOC<sub>soil</sub> Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL; or

- c. For Constituents of Concern: Compile a list of constituents that exceed their respective MDL at the Monitoring Point yet do so in less than ten percent of the background samples taken during that Reporting Period. The discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or (2) contains one constituent which exceeds its PQL.

- 3. Discrete Retest (Title 27 Section 25415(e)(8)(E)). In the event that the discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the discharger shall, within 30 days of this indication, collect two new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Re-sampling of the Background Monitoring Points is optional. As soon as the data is available, the discharger shall rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the discharger shall conclude that a release has been discovered. All re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter which triggered the indication there, as follows:

- a. If an ANOVA method was used, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;
- b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, using the new sample suites from the indicating Monitoring Point;
- c. If the non-statistical method was used:
  - 1. Because the VOC Composite Monitoring parameters (VOC<sub>water</sub> or VOC<sub>soil</sub>) each address, as a single parameter, an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;
  - 2. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2.c. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

**B. RESPONSES TO VOC DETECTION IN BACKGROUND**

1. Except as indicated in Part III.B.2., any time the laboratory analysis of a sample from a Background Monitoring Point, sampled for VOCs under Part III.A., shows either (1) two or more VOCs above their respective MDL, or (2) one VOC above its respective PQL, then the discharger shall immediately notify the Regional Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven days,, and shall obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs within thirty days. If either or both the new samples validates the presence of VOC(s) at that Background Monitoring Point, using the above procedure, the discharger shall:
  - a. Immediately notify the Regional Board about the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven days of validation; and
  - b. Within 180 days of validation, submit a report, acceptable to the Regional Board's Executive Officer, which examines the possibility that the detected VOC(s) originated from the Landfill and proposing appropriate changes to the Monitoring Program.
2. If the Regional Board's Executive Officer determines, after reviewing the report submitted under Part III.B.1.b that the detected VOC(s) most likely originated from the Landfill, the discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Part I.E.2.d.

**SUMMARY OF SELF MONITORING AND REPORTING PROGRAMS**

**A. WASTE**

	<u>Landfill</u>	<u>Reporting Frequency</u>
1. Solid wastes discharged	Cubic yards	Quarterly
2. Type of Materials discharged	-----	Quarterly
3. Remaining capacity of Waste Management Facility	Cubic yards	Quarterly
4. Any discharge of wastes other than those allowed by this Board Order	Type, volume and location	Immediately upon becoming aware that the waste has been discharged together with action for immediate correction and prevention of recurrence
5. Hazardous waste load checking and storage (not more than 90 days)	Cubic yards	Quarterly

## B. GROUND WATER MONITORING

The ground water monitoring wells shall be sampled quarterly during March, June, September and December. The samples shall be analyzed for the following:

### 1. Inorganics

<u>Parameters</u>	<u>Unit</u>	<u>Samples</u>	<u>Reporting Frequency</u>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	Grab	Quarterly
Ammonia-Nitrogen	mg/L	Grab	Quarterly
Antimony	mg/L	Grab	Quarterly
Arsenic	mg/L	Grab	Quarterly
Barium	mg/L	Grab	Quarterly
Beryllium	mg/L	Grab	Quarterly
Bicarbonate (HCO <sub>3</sub> )	mg/L	Grab	Quarterly
Bicarbonate ((CaCO <sub>3</sub> )	mg/L	Grab	Quarterly
Cadmium	mg/L	Grab	Quarterly
Calcium	mg/L	Grab	Quarterly
Carbonate (CO <sub>3</sub> )	mg/L	Grab	Quarterly
Chromium	mg/L	Grab	Quarterly
Cobalt	mg/L	Grab	Quarterly
COD	mg/L	Grab	Quarterly
Copper	mg/L	Grab	Quarterly
Cyanide	mg/L	Grab	Quarterly
Electrical Conductivity	mg/L	Grab	Quarterly
Iron	mg/L	Grab	Quarterly
Lead	mg/L	Grab	Quarterly
Magnesium	mg/L	Grab	Quarterly
Manganese	mg/L	Grab	Quarterly
Mercury	mg/L	Grab	Quarterly
Nickel	mg/L	Grab	Quarterly
Nitrate - Nitrogen	mg/L	Grab	Quarterly
Nitrite - Nitrogen	mg/L	Grab	Quarterly
Potassium	mg/L	Grab	Quarterly
pH	Number	Grab	Quarterly
Selenium	mg/L	Grab	Quarterly
Silver	mg/L	Grab	Quarterly
Sodium	mg/L	Grab	Quarterly
Sulfide	mg/L	Grab	Quarterly
Sulfate	mg/L	Grab	Quarterly
Thallium	mg/L	Grab	Quarterly
TDS	mg/L	Grab	Quarterly
Vanadium	mg/L	Grab	Quarterly
Zinc	mg/L	Grab	Quarterly
2. Specific conductance	Micromhos/cm	Grab	Quarterly
3. Temperature	°F	Grab	Quarterly
4. Volatile Organics	mg/L	Grab	Quarterly
5. Semi- volatile Organics	mg/L	Grab	Quarterly
6. Ground Water Elevation	feet (USGS Datum)	Measurement	Quarterly

The collection, preservation and holding times of all samples shall be in accordance with U. S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the State Department of Health Services to perform the required analyses.

### **REPORTING**

1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.
2. Records of monitoring information shall include:
  - a. The date, exact place, and time of sampling or measurement(s);
  - b. The individual(s) who performed the sampling or measurement(s);
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The analytical techniques or method used; and
  - f. The results of such analyses.
3. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."
4. A duly authorized representative of the discharger may sign the documents if:
  - a. The authorization is made in writing by the person described above;
  - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
  - c. The written authorization is submitted to the Regional Board's Executive Officer.
5. Report immediately any failure in the waste disposal system to the Regional Board's Executive Officer and the Director of the County Environmental Health Department by telephone with follow-up letter.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Quarterly monitoring report shall be submitted to the Regional Board in accordance with the following schedule:

First Quarter (January through March) - due by June 15  
Second Quarter (April through June) - due by September 15  
Third Quarter (July through September) - due by December 15  
Fourth Quarter (October through December) - due by March 15

8. Annual monitoring reports shall be submitted to the Regional Board by March 15 of each year.
9. Five-year monitoring reports shall be submitted to the Regional Board by March 15 of the 6th year.
10. Submit monitoring reports to:

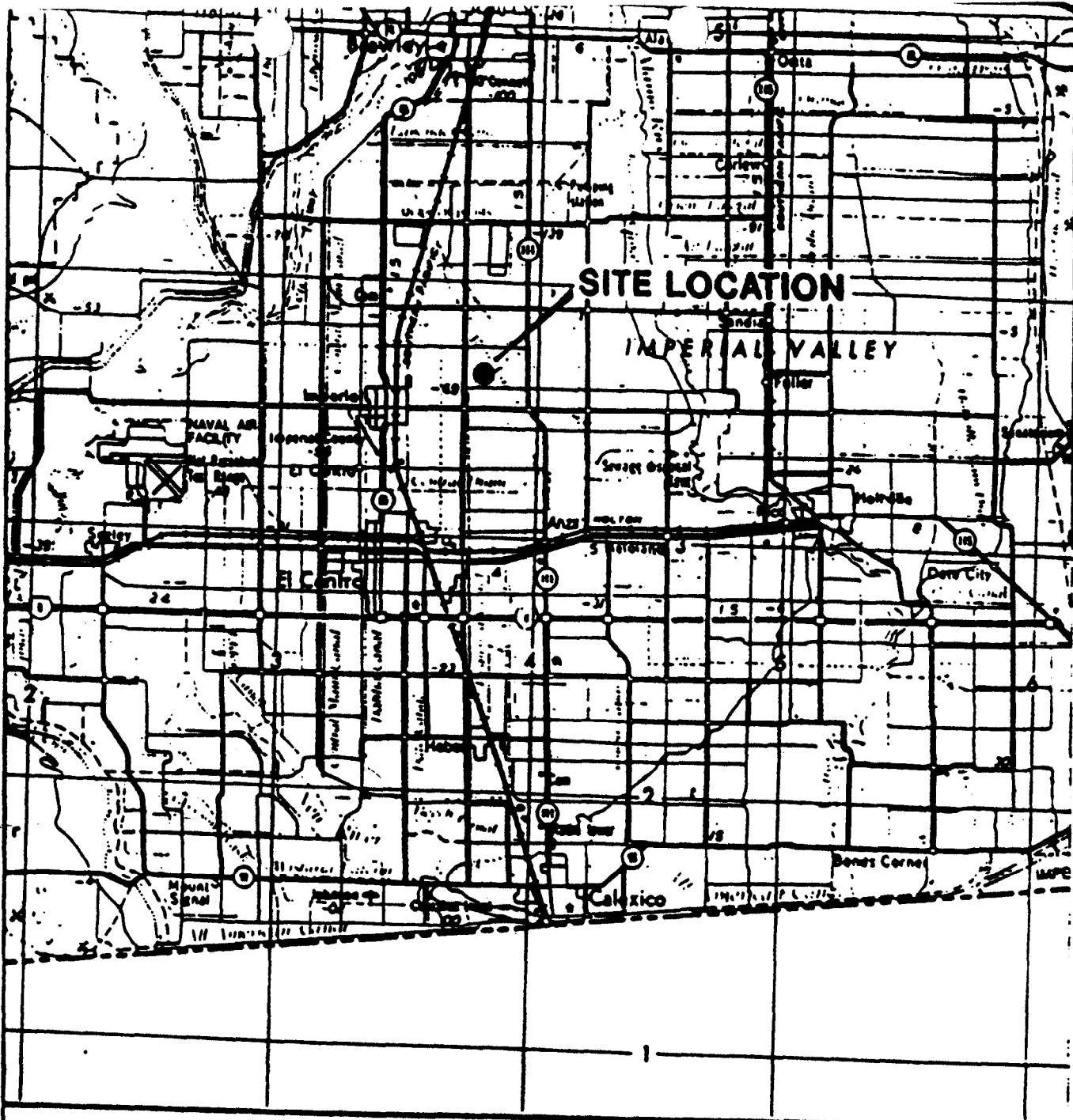
California Regional Water Quality Control Board  
Colorado River Basin Region  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

Ordered by:

Philip A. Guenley  
Executive Officer

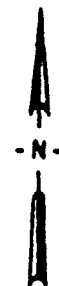
November 12, 1998

Date



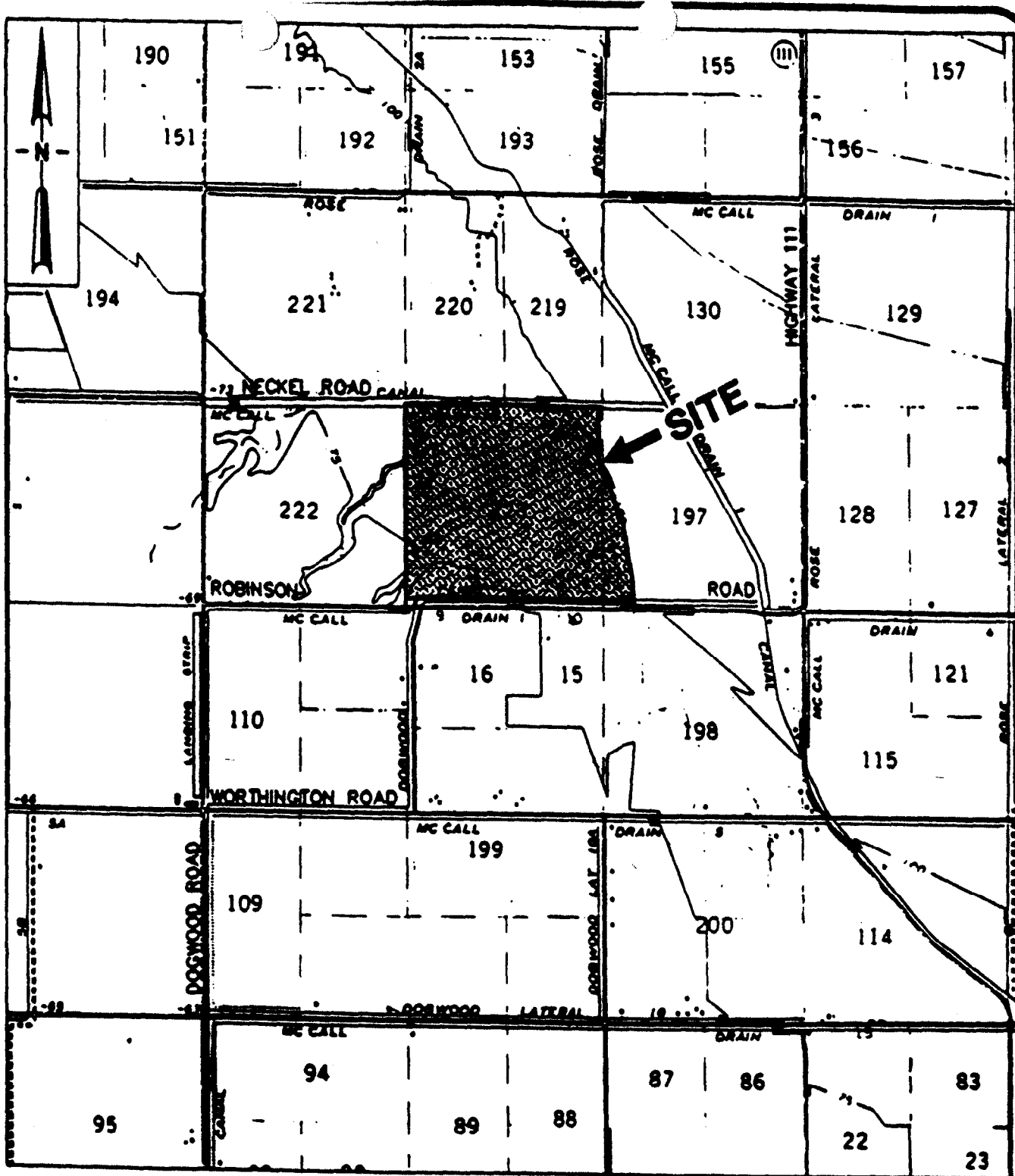
Base map from U.S. Geological Survey 2° Sheet:  
El Centro, California: (1958; revised 1977).

Scale: 0 4 8 Miles



#### ATTACHMENT A

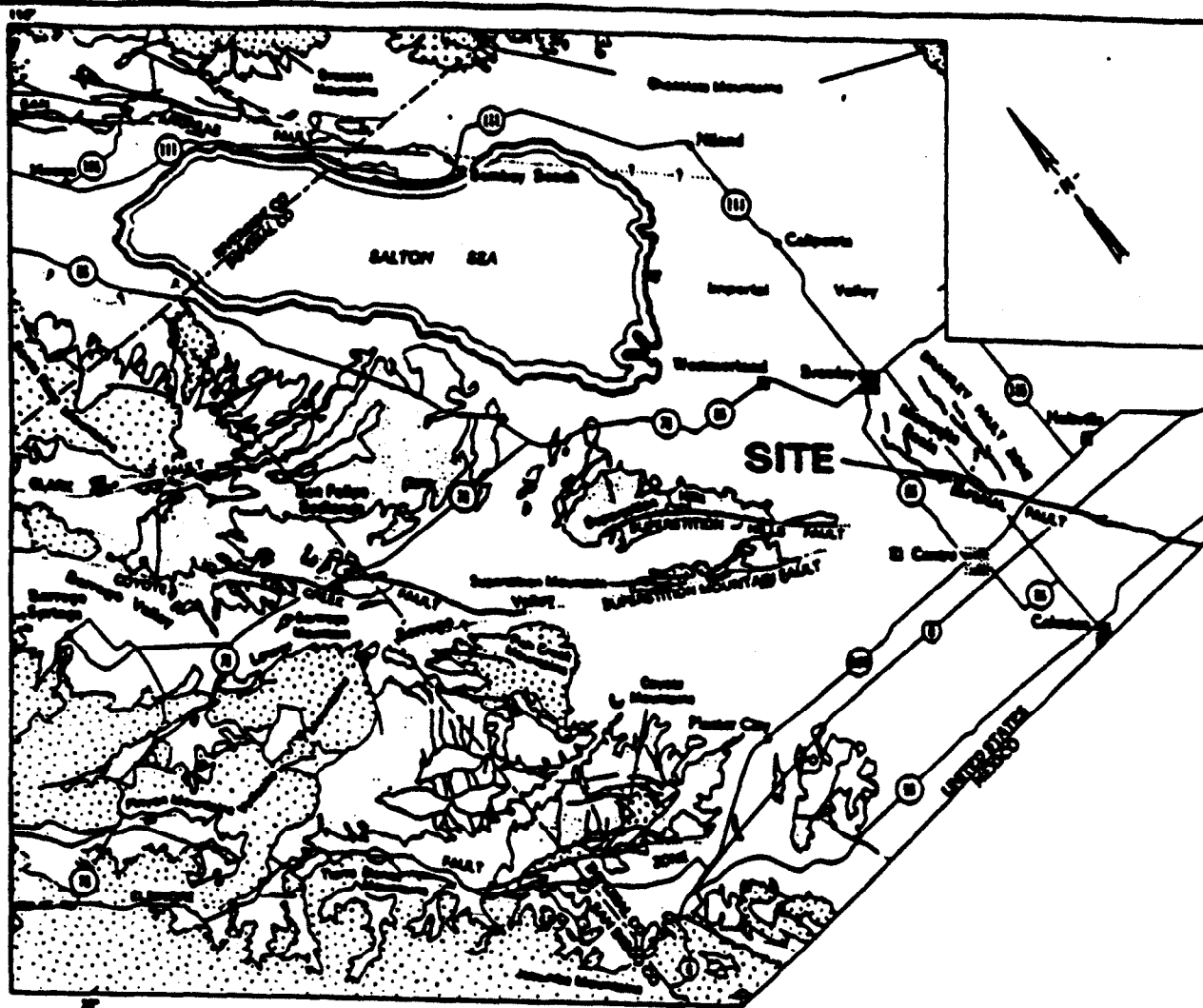
SITE LOCATION MAP  
REPUBLIC IMPERIAL ACQUISITION CORPORATION  
CLOSURE AND POST-CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
ORDER NO 98-082







REFERENCE: USGS 7.5' EL CENTRO QUADRANGLE,  
PHOTOREVISED 1979.



#### ATTACHMENT B

SITE VICINITY MAP  
REPUBLIC IMPERIAL ACQUISITION CORPORATION  
CLOSURE AND POST-CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
ORDER NO 98-082



### EXPLANATION

-  Quaternary (Holocene) alluvium, dune sand, and lake deposits
-  Cenozoic intrusive rocks or their volcanic equivalents
-  Cenozoic stratified rocks and interbedded volcanic rocks
-  Pre-Cenozoic crystalline rocks

-  Contact
-  Faults active in Cenozoic time—Solid where exposed; dashed or queried where inferred; dotted where concealed. Hatching where historical movement has occurred

**SOURCE:** Imperial Valley, California.  
Earthquake of October 18, 1970;  
U.S. Geological Survey Professional  
Paper 1254 (1982)

24 12 MILES 0

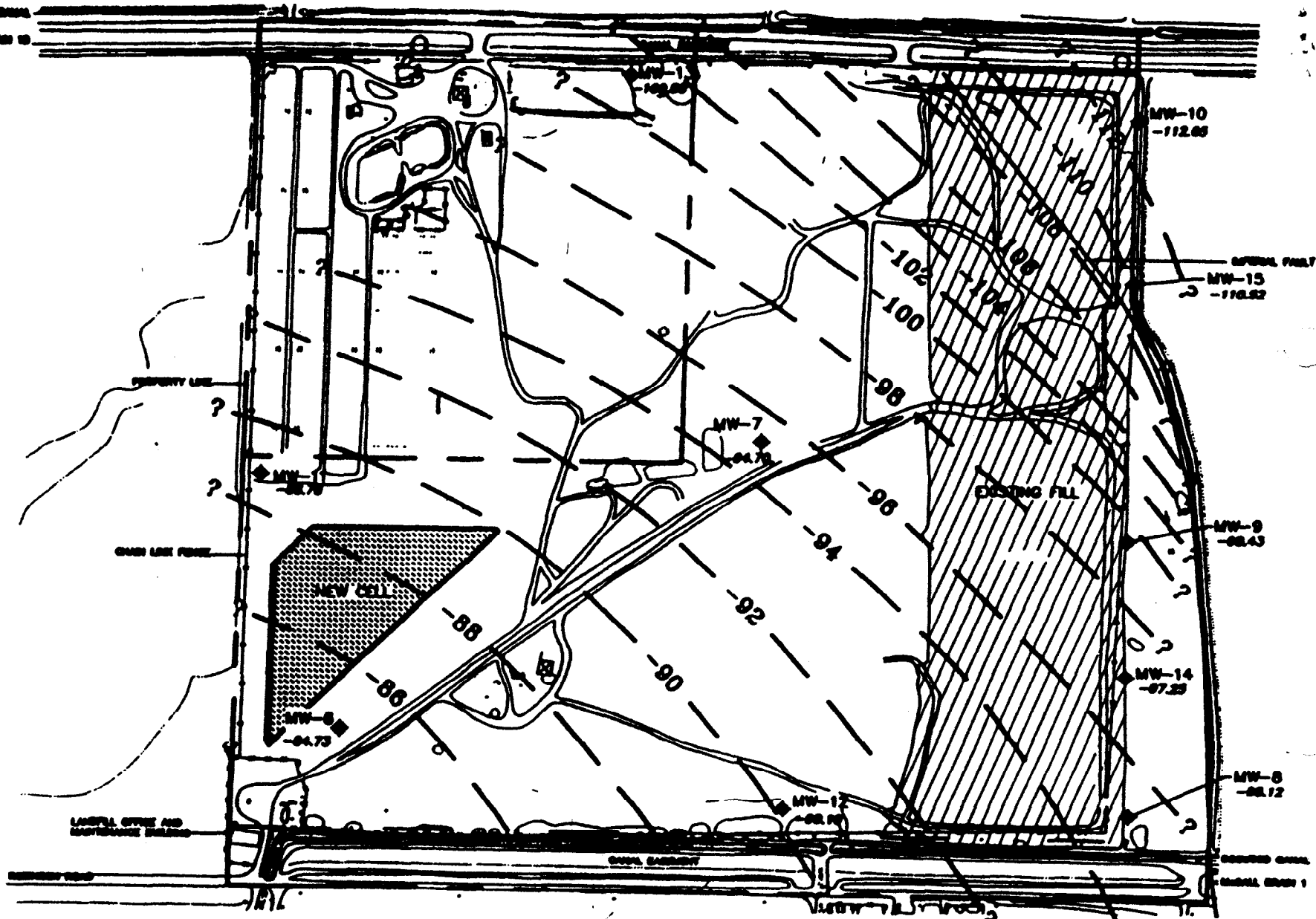


### ATTACHMENT C

REGIONAL GEOLOGY AND FAULT MAP  
REPUBLIC IMPERIAL ACQUISITION CORPORATION  
CLOSURE AND POST-CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
ORDER NO 98-082



DATE 08/04  
 SCALE 1:1000



# ATTACHMENT F

BACKGROUND AND COMPLIANCE MONITORING WELLS  
 REPUBLIC IMPERIAL ACQUISITION CORPORATION  
 CLOSURE AND POST-CLOSURE MAINTENANCE OF REPUBLIC IMPERIAL LANDFILL  
 ORDER NO 98-082

